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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,040	06/28/1999	MITSURO SUGITA	684.2864	8450

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EXAMINER

NGUYEN, HUNG

ART UNIT PAPER NUMBER

2851

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/337,040

Applicant(s)

SUGITA ET AL.

Examiner

Hung Henry V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 6/5/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-25,38-50,63-75,83 and 85-174 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-50,63-75,83,85-99,104-125,134-138 and 156-174 is/are allowed.
- 6) ☒ Claim(s) 13-19,21-25,100-103,126-133,139 and 141-155 is/are rejected.
- 7) ☒ Claim(s) 20 and 140 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Status of Prosecution

1. This office action is in response to the Preliminary Amendment filed June 5, 03, which had not been entered in the file at the time the non-final office action was mailed to applicants on June 10, 2003. The statutory period for response has been restarted to coincide with the mailing of this office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 13-19, 21-25, 100-103, 126-129 are rejected under 35 U.S.C. 102(e) as being anticipated by Gallatin et al (U.S.Pat. 6,259,513).

With regard to claims 13, 21-25, 100-103, 126-129, Gallatin et al (fig.1) discloses an exposure apparatus comprising all of the limitations of the instant claims such as: a light source (12); an optical element (14) disposed at the light source side of the reticle and having first

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exposure means (26 for example) for illumination a predetermined mask with light of a predetermined wavelength under the first mask illumination condition for exposing a first pattern (54) onto a predetermined region (20) and a second exposure means (28 for example) for illumination a predetermined mask with light of a predetermined wavelength under the second mask illumination condition for exposing a second pattern (56) onto the predetermined exposure region (20) where the first mask illumination condition is different with the second mask illumination condition (see col.1, lines 66-67). It is the examiner's position that although Gallatin does not expressly disclose the first exposure and second exposure are carried prior to a development process, this is seen to be an inherent teaching since in an exposure apparatus for transferring a multiple patterns formed on a same mask onto a wafer as taught by Gallatin, (unless otherwise stated) all exposures must be performed before the development process for lithographically printing a circuit pattern on photosensitive wafer.

Gallatin further notes the light source can be any illumination source or system including KrF excimer laser, an ArF or F2 excimer laser (see col.2, lines 47-53) and Gallatin further discloses a projection optical system (18).

As to claims 14-17, Gallatin teaches "each of the plurality of different illumination regions 26, 28, 30 and 32 are used to control the illumination properties such as for example numerical aperture, coherence, fill, and sag of the resulting illumination used to project the image of the reticle 16" (see col.3, lines 13-17).

As to claims 18-19, Gallatin further teaches on a single reticle (16) "many different patterns or geometric configurations may be used. The geometric configurations graphically illustrate different patterns" (see col.3, lines 55-63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 139, and 141-155 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallatin et al (U.S.Pat. 6,259,513) in view of Suwa et al (U.S.Pat. 4,908,656).

With respect to claims 139 and 141-155, Gallatin discloses an exposure apparatus comprising substantially all of the basic features of the instant claims including having first and second exposure means for illuminating a predetermined mask under first and second exposure conditions as discussed above. Gallatin does not expressly disclose the first and second exposures are carried out simultaneously. Suwa et al discloses an exposure method for projecting a pattern formed on a mask onto a substrate where the exposures are carried under different exposure conditions and Suwa further teaches a plurality of partial regions on the substrate are exposed under varying exposure conditions simultaneously (see col.3, lines 3, lines 66 thru col.4, lines 3). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Gallatin and Suwa to obtain the invention as specified in the instant claims. It would have been obvious to a skilled artisan to carry out the first and second exposures of Gallatin simultaneously

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as suggested by Suwa. The purpose of doing so would have been to shorten the exposure time and thus the operating cost of the exposure device can be reduced.

Allowable Subject Matter

5. Claims 20, 140 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 38-50, 63-75, 83, 85-99, 104-125, 130-174 are allowed.

New added claims 140 and 156-174 have been found to be allowable over the prior art of record since the prior art of record fails to teach or suggest an exposure apparatus comprising the first and second exposure means for performing first and second exposures substantially simultaneously, prior to a development process, with the first exposure means and the second exposure means having the polarization directions satisfying conditions as recited in the instant claims.

Response to Amendment/Arguments

6. Applicant's amendment filed June 5, 2003 have been entered. New claims 139-174 have been added. Applicant's arguments with respect to the prior art of record have been carefully reviewed and have been traversed as set forth above.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

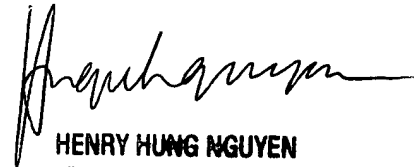
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

Hvn

8/22/03



HENRY HUNG NGUYEN
PRIMARY EXAMINER